

Response to Arguments

1. Applicant's arguments filed on 07/10/2009 with respect to 1-3, 5, and 8-16 has been considered but is moot in view of the new ground(s) of rejection.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1 - 2, 5, and 8 - 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicants Admitted Prior Art (hereafter referred as AAPA; note the examiner is using the PgPub 2004/0057719 to refer to the paragraph numbers and such), in view of Inui (US PgPub No. 2001/0025969), and in further view of YAMAMURA et al. (JP 08256296 A) in further view of official notice.

Regarding **claim 1**, AAPA teaches a solid state image pick-up device formed on a chip, comprising:

a pixel region (figures 7 and 8; Note: figures 7A,7B and 8 are prior art and the applicant has submitted an amendment to the drawing to label these figures as prior art); horizontal scanning circuit arranged along side of the chip (figure 8, item 205); a vertical scanning circuit arranged along a side of the chip not parallel to a side of the

Art Unit: 2622

chip along which a horizontal scanning circuit is arranged, wherein the vertical scanning circuit has a lower driving frequency than that of the horizontal scanning circuits (figure 8, item 202 and paragraphs 0014 - 0016); and an amplifier for amplifying the signal charge read from the pixel region by the horizontal scanning circuits (figure 8 item 207), outputting video signals (note this outputting of the video signal is not associated with any component as claimed so the examiner can consider any item such as item 207, 201, 204, 206 or any component as outputting video signal to be used later, in this case the examiner chooses item any one or a combination of these items).

However, AAPA fails to disclose horizontal scanning circuits arranged along sides of the chip sandwiching the pixel region for reading a signal charge from the pixel region.

Inui, on the other hand teaches horizontal scanning circuits arranged along sides of the chip sandwiching the pixel region for reading a signal charge from the pixel region.

More specifically, Inui teaches horizontal scanning circuits arranged along sides of the chip sandwiching the pixel region for reading a signal charge from the pixel region (figures 1 and 12; horizontal scanning circuits).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teachings of Inui with the teachings of AAPA to have a faster method of readout and to make the image readout process faster.

However, AAPA in view of Inui fail to disclose a pad for outputting the video signals to an outside of the chip, the pad outputting the video signals being arranged along a side of the chip along which none of the horizontal scanning circuits and the vertical scanning circuit is arranged.

YAMAMURA et al., on the other hand teaches a pad for outputting the video signals to an outside of the chip, the pad being outputting the video signals arranged along a side of the chip along which none of the horizontal scanning circuits and the vertical scanning circuit is arranged.

More specifically, YAMAMURA et al. teaches a pad for outputting the video signals to an outside of the chip, the pad outputting the video signals being arranged along a side of the chip along which none of the horizontal scanning circuits and the vertical scanning circuit is arranged (figures 1 – 2; pads arranged along vertical side of the chip away from the horizontal side where the horizontal registers are located and away from the vertical register; i.e. as shown by the location of the registers of AAPA and Inui).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teachings of YAMAMURA et al. with the teachings of AAPA in view of Inui because in page 1 lines 5 – 8 and page 5 lines 4 – 17 also paragraphs 0009, 0012, 0013, and 0016 YAMAMURA et al. teaches that using the invention flaring problems can be reduced and corrected which in turn will produce an improved image.

However, AAPA in view of Inui in further view of YAMAMURA et al. fail to disclose a pad being supplied with a signal for driving a horizontal scanning circuit of horizontal scanning circuits, the pad being supplied with the signal for driving the horizontal scanning circuit being arranged only along a side of the chip along which the horizontal scanning circuit is arranged.

The examiner takes Official Notice that it is old and well known in the art to have pads arranged along the side of the chip along which horizontal scanning circuit is arranged for supplying a drive frequency to the horizontal scanning circuit.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have pads arranged along the side of the chip along which horizontal scanning circuit is arranged for supplying a drive frequency to the horizontal scanning circuit so that power is easily and quickly delivered to the horizontal scanning circuit.

Regarding **claim 2**, as mentioned above in the discussion of claim 1, AAPA in view of Inui and further in view of YAMAMURA et al. teach all of the limitations of the parent claim. Additionally, AAPA teaches that wherein in the pixel region, pixels having an active element are two-dimensionally arranged (figure 7A and 8 with active elements 201, 204, and 206).

Regarding **claim 5**, as mentioned above in the discussion of claim 2, AAPA in view of Inui and further in view of YAMAMURA et al. teach all of the limitations of the

Art Unit: 2622

parent claim. Additionally, Inui teaches that the pixel region is formed into a rectangle, and the horizontal scanning circuits are arranged closer to a long side of the pixel region (figures 1 and 12; horizontal scanning circuits).

Regarding **claim 8**, as mentioned above in the discussion of claim 1, AAPA in view of Inui and further in view of YAMAMURA et al. teach all of the limitations of the parent claim.

Additionally, AAPA teaches a signal processing unit for processing a signal from the solid state image pick-up device (Paragraphs 0005 – 0018, processing of the pixels and outputting of the image is done by a processor even though it is not specifically discussed).

However, AAPA fails to disclose a lens for forming an optical image of a subject.

YAMAMURA et al., on the other hand teaches a lens for forming an optical image of a subject.

More specifically, YAMAMURA et al. teaches a camera including a lens for forming an optical image of a subject (Page 1 lines 10 – 21 also paragraphs 0004 and 0007 – 0009).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teachings of YAMAMURA et al. with the teachings of AAPA in view of Inui because in page 1 lines 5 – 8 and page 5 lines 4 – 17 also paragraphs 0009, 0012, 0013, and 0016 YAMAMURA et al. teaches that using the

Art Unit: 2622

invention flaring problems can be reduced and corrected which in turn will produce an improved image.

Regarding **claim 9**, AAPA teaches a solid state image pick-up device formed on a chip, comprising:

a pixel region (figures 7 and 8; Note: figures 7A,7B and 8 are prior art and the applicant has submitted an amendment to the drawing to label these figures as prior art); horizontal scanning circuit arranged along side of the chip (figure 8, item 205); a vertical scanning circuit arranged along a side of the chip not parallel to a side of the chip along which a horizontal scanning circuit is arranged, wherein the vertical scanning circuit has a lower driving frequency than that of the horizontal scanning circuits (figure 8, item 202 and paragraphs 0014 - 0016); and an amplifier for amplifying the signal charge read from the pixel region by the horizontal scanning circuits (figure 8 item 207), outputting video signals (note this outputting of the video signal is not associated with any component as claimed so the examiner can consider any item such as item 207, 201, 204, 206 or any component as outputting video signal to be used later, in this case the examiner chooses item any one or a combination of these items).

However, AAPA fails to disclose horizontal scanning circuits arranged along sides of the chip sandwiching the pixel region for reading a signal charge from the pixel region.

Inui, on the other hand teaches horizontal scanning circuits arranged along sides of the chip sandwiching the pixel region for reading a signal charge from the pixel region.

More specifically, Inui teaches horizontal scanning circuits arranged along sides of the chip sandwiching the pixel region for reading a signal charge from the pixel region (figures 1 and 12; horizontal scanning circuits).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teachings of Inui with the teachings of AAPA to have a faster method of readout and to make the image readout process faster.

However, AAPA in view of Inui fail to disclose a pad for outputting the video signals to an outside of the chip, the pad outputting the video signals being arranged along a side of the chip along which none of the horizontal scanning circuits and the vertical scanning circuit is arranged.

YAMAMURA et al., on the other hand teaches a pad for outputting the video signals to an outside of the chip, the pad being outputting the video signals arranged along a side of the chip along which none of the horizontal scanning circuits and the vertical scanning circuit is arranged.

More specifically, YAMAMURA et al. teaches a pad for outputting the video signals to an outside of the chip, the pad outputting the video signals being arranged along a side of the chip along which none of the horizontal scanning circuits and the vertical scanning circuit is arranged (figures 1 – 2; pads arranged along vertical side of

Art Unit: 2622

the chip away from the horizontal side where the horizontal registers are located and away from the vertical register; i.e. as shown by the location of the registers of AAPA and Inui).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teachings of YAMAMURA et al. with the teachings of AAPA in view of Inui because in page 1 lines 5 – 8 and page 5 lines 4 – 17 also paragraphs 0009, 0012, 0013, and 0016 YAMAMURA et al. teaches that using the invention flaring problems can be reduced and corrected which in turn will produce an improved image.

However, AAPA in view of Inui in further view of YAMAMURA et al. fail to disclose a pad being supplied with a signal for driving a horizontal scanning circuit of horizontal scanning circuits, the pad being supplied with the signal for driving the horizontal scanning circuit being arranged only along a side of the chip along which the horizontal scanning circuit is arranged.

The examiner takes Official Notice that it is old and well known in the art to have pads arranged along the side of the chip along which horizontal scanning circuit is arranged for supplying a drive frequency to the horizontal scanning circuit.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have pads arranged along the side of the chip along which horizontal scanning circuit is arranged for supplying a drive frequency to the horizontal scanning circuit so that power is easily and quickly delivered to the horizontal scanning circuit.

Regarding **claim 10**, AAPA teaches a solid state image pick-up device formed on a chip, comprising:

a pixel region (figures 7 and 8; Note: figures 7A,7B and 8 are prior art and the applicant has submitted an amendment to the drawing to label these figures as prior art); horizontal scanning circuit arranged along side of the chip (figure 8, item 205); a vertical scanning circuit arranged along a side of the chip not parallel to a side of the chip along which a horizontal scanning circuit is arranged, wherein the vertical scanning circuit has a lower driving frequency than that of the horizontal scanning circuits (figure 8, item 202 and paragraphs 0014 - 0016); and an amplifier for amplifying the signal charge read from the pixel region by the horizontal scanning circuits (figure 8 item 207), outputting video signals (note this outputting of the video signal is not associated with any component as claimed so the examiner can consider any item such as item 207, 201, 204, 206 or any component as outputting video signal to be used later, in this case the examiner chooses item any one or a combination of these items).

However, AAPA fails to disclose horizontal scanning circuits arranged along sides of the chip sandwiching the pixel region for reading a signal charge from the pixel region.

Inui, on the other hand teaches horizontal scanning circuits arranged along sides of the chip sandwiching the pixel region for reading a signal charge from the pixel region.

More specifically, Inui teaches horizontal scanning circuits arranged along sides of the chip sandwiching the pixel region for reading a signal charge from the pixel region (figures 1 and 12; horizontal scanning circuits).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teachings of Inui with the teachings of AAPA to have a faster method of readout and to make the image readout process faster.

However, AAPA in view of Inui fail to disclose a pad for outputting the video signals to an outside of the chip, the pad outputting the video signals being arranged along a side of the chip along which none of the horizontal scanning circuits and the vertical scanning circuit is arranged.

YAMAMURA et al., on the other hand teaches a pad for outputting the video signals to an outside of the chip, the pad being outputting the video signals arranged along a side of the chip along which none of the horizontal scanning circuits and the vertical scanning circuit is arranged.

More specifically, YAMAMURA et al. teaches a pad for outputting the video signals to an outside of the chip, the pad outputting the video signals being arranged along a side of the chip along which none of the horizontal scanning circuits and the vertical scanning circuit is arranged (figures 1 – 2; pads arranged along vertical side of the chip away from the horizontal side where the horizontal registers are located and away from the vertical register; i.e. as shown by the location of the registers of AAPA and Inui).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teachings of YAMAMURA et al. with the teachings of AAPA in view of Inui because in page 1 lines 5 – 8 and page 5 lines 4 – 17 also paragraphs 0009, 0012, 0013, and 0016 YAMAMURA et al. teaches that using the invention flaring problems can be reduced and corrected which in turn will produce an improved image.

However, AAPA in view of Inui in further view of YAMAMURA et al. fail to disclose a pad being supplied with a signal for driving a horizontal scanning circuit of horizontal scanning circuits, the pad being supplied with the signal for driving the horizontal scanning circuit being arranged only along a side of the chip along which the horizontal scanning circuit is arranged.

The examiner takes Official Notice that it is old and well known in the art to have pads arranged along the side of the chip along which horizontal scanning circuit is arranged for supplying a drive frequency to the horizontal scanning circuit.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have pads arranged along the side of the chip along which horizontal scanning circuit is arranged for supplying a drive frequency to the horizontal scanning circuit so that power is easily and quickly delivered to the horizontal scanning circuit.

Regarding **claim 11**, as mentioned above in the discussion of claim 1, AAPA in view of Inui and further in view of YAMAMURA et al. teach all of the limitations of the

Art Unit: 2622

parent claim. Additionally, Inui teaches that side portions along which the horizontal scanning circuits are arranged and a side portion along which the vertical scanning circuit is arranged are adjacent to each other (figures 1 and 12; horizontal scanning circuits and vertical scanning circuit).

Regarding **claim 12**, as mentioned above in the discussion of claim 9, AAPA in view of Inui and further in view of YAMAMURA et al. teach all of the limitations of the parent claim. Additionally, Inui teaches that side portions along which the horizontal scanning circuits are arranged and a side portion along which the vertical scanning circuit is arranged are adjacent to each other (figures 1 and 12; horizontal scanning circuits and vertical scanning circuit).

Regarding **claim 13**, as mentioned above in the discussion of claim 10, AAPA in view of Inui and further in view of YAMAMURA et al. teach all of the limitations of the parent claim. Additionally, Inui teaches that side portions along which the horizontal scanning circuits are arranged and a side portion along which the vertical scanning circuit is arranged are adjacent to each other (figures 1 and 12; horizontal scanning circuits and vertical scanning circuit).

Regarding **claim 14**, as mentioned above in the discussion of claim 1, AAPA in view of Inui and further in view of YAMAMURA et al. teach all of the limitations of the parent claim. Additionally, YAMAMURA et al. teaches that the pad is arranged only

Art Unit: 2622

along a side portion of the chip at an angle of 90 degrees to a side portion along which a horizontal scanning circuit, of the horizontal scanning circuits, is arranged (figures 1 – 2; pads arranged along vertical side of the chip away from the horizontal side where the horizontal registers are located and away from the vertical register; i.e. as shown by the location of the registers of AAPA and Inui).

Regarding **claim 15**, as mentioned above in the discussion of claim 9, AAPA in view of Inui and further in view of YAMAMURA et al. teach all of the limitations of the parent claim. Additionally, YAMAMURA et al. teaches that the pad is arranged only along a side portion of the chip at an angle of 90 degrees to a side portion along which a horizontal scanning circuit, of the horizontal scanning circuits, is arranged (figures 1 – 2; pads arranged along vertical side of the chip away from the horizontal side where the horizontal registers are located and away from the vertical register; i.e. as shown by the location of the registers of AAPA and Inui).

Regarding **claim 16**, as mentioned above in the discussion of claim 10, AAPA in view of Inui and further in view of YAMAMURA et al. teach all of the limitations of the parent claim. Additionally, YAMAMURA et al. teaches that the pad is arranged only along a side portion of the chip at an angle of 90 degrees to a side portion along which a horizontal scanning circuit, of the horizontal scanning circuits, is arranged (figures 1 – 2; pads arranged along vertical side of the chip away from the horizontal side where the

Art Unit: 2622

horizontal registers are located and away from the vertical register; i.e. as shown by the location of the registers of AAPA and Inui).

3. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Applicants Admitted Prior Art (hereafter referred as AAPA; note the examiner is using the PgPub 2004/0057719 to refer to the paragraph numbers and such), in view of Inui (US PgPub No. 2001/0025969), in view of official notice, and in further view of YAMAMURA et al. (JP 08256296 A) in further view of Itano et al. (US PgPub 2002/0051071).

Regarding **claim 3**, as mentioned above in the discussion of claim 2, AAPA in view of Inui and further in view of YAMAMURA et al. teach all of the limitations of the parent claim. However, AAPA in view of Inui and further in view of YAMAMURA et al. fail to disclose that the active element comprises **at least one** selected from the group consisting of a transfer MOS transistor, a reset MOS transistor, a source follower input MOS transistor, and a selection MOS transistor. Itano et al., on the other hand teaches that the active element comprises **at least one** selected from the group consisting of a transfer MOS transistor, a reset MOS transistor, a source follower input MOS transistor, and a selection MOS transistor.

More specifically, Itano et al. teaches the active element comprises **at least one** selected from the group consisting of a transfer MOS transistor (figure 1 item 105, and paragraph 0006), a reset MOS transistor (figure 1 items 110a and 110b, and paragraph

Art Unit: 2622

0006), a source follower input MOS transistor (figure 1 item 107, and paragraphs 0006, 0048, 0051), and a selection MOS transistor (paragraph 0051).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teachings of Itano et al. with the teachings of AAPA in view of Inui and further in view of YAMAMURA et al. for reduction of size and in turn cost as taught in paragraph 0021 of Itano et al.

Conclusion

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).
5. a shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Art Unit: 2622

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Usman Khan whose telephone number is (571) 270-1131. The examiner can normally be reached on Mon-Fri 6:45-3:15.

7. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (571) 272-3022. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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